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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,116	10/23/2003	Ronald Caudill	282660-00247	6573

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David C. Jenkins  
Eckert Seamans Cherin & Mellott, LLC  
600 Grant Street, 44th Floor  
Pittsburgh, PA 15219

EXAMINER

CASTELLANO, STEPHEN J

ART UNIT PAPER NUMBER

3727

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

10/692,116

Applicant(s)

CAUDILL ET AL.

Examiner

Stephen J. Castellano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers


- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Claims 1-16 are pending.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldenby in view of Seal et al. (Seal).

Haldenby discloses a gas cylinder comprising a metal shell with a plastic coating of polyethylene is bonded to the inner surface of the shell. Haldenby discloses the invention except for the composite overwrap and the metal of the shell being aluminum. Seal teaches an overwrap disposed about the exterior of an aluminum shell for aerospace or rocket applications. It would have been obvious to add the overwrap to reinforce the shell and make it capable of withstanding higher internal pressures. It would have been obvious to modify the metal of the shell to be aluminum to provide a metal of high strength to weight ratio to make the cylinder lighter for aerospace and rocket applications.

Re claims 2 and 9, see claim 11, line 4 of Haldenby where it states "fusion of the polyethylene to the metal surface to begin."

Re claims 6 and 14, Seal teaches the dimensions for a composite overwrapped pressure vessel in col. 15 lines 14-21 and the volume in col. 15, line 36 of 5000 cubic inches which is within the range. It would have been obvious to provide a volume within the 0.5 to 500 liter range as this range is useful in the aerospace industry as taught by Seal.

Re claims 7 and 15, Seal discloses the overwrap to be a graphite-epoxy composite. Graphite is carbon.

Re claims 8, 9 and 14-16, the valve is 33 in Haldenby.

Re claim 16, Seal teaches a burst pressure of 9300 psi. in col. 15, line 35. It would have been obvious to modify the structure to contain gas within the 500 to 10000 psi. range as this range is useful in the aerospace industry as taught by Seal.

Claims 3-5 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldenby in view of Seal as applied to claims 2 and 9 above, and further in view of Luttmann et al. (Luttmann).

The combination discloses the invention except for the polyethylene coating isn't a copolymer. Luttmann teaches an interior coating that is a polyethylene copolymer. It would have been obvious to modify the coating to be a polyethylene copolymer in order to get the benefit of another plastic material in addition to the benefit of polyethylene. In the case of Luttmann, the copolymer includes both polyethylene and polypropylene.

Applicant's arguments filed June 19, 2006 have been fully considered but they are not persuasive. The arguments states that there is a lack of a specific reference to the modification of Haldenby in view of Seal in the references. There is no specific reference to Haldenby in Seal or to Seal in Haldenby. By using such a stringent criteria, it would almost never be possible to make an obviousness rejection. Patent law allows for obviousness rejections where the references teach, suggest and motivate that the advantages brought out in different references may be combined to teach the invention as a whole. Haldenby teaches the advantages of internal coatings to protect the interior of a metal cylinder. Seal teaches the advantages of a composite

overwrap to reinforce an increase the strength of a metal cylinder. It would have been obvious that if one having ordinary skill in the art desired internal protection and superior strength that the ordinary skilled artisan would combine the teachings of Haldenby and Seal.

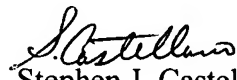
**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Castellano whose telephone number is 571-272-4535. The examiner can normally be reached on increased flexibility plan (IFP).

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Stephen J. Castellano  
Primary Examiner  
Art Unit 3727

sjc